

AMENDMENTS TO THE CLAIMS

The claims in this listing replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Previously Presented) An information provisioning apparatus comprising:

an acquirer configured to acquire a data stream of content that has timewise continuity and that is composed of a plurality of segments, and metadata that includes information related to the content and information related to the segments;

a unitizer configured to divide metadata, corresponding to segments subjected to processing, into metadata processing units set so as to make possible partial execution of the metadata; and

a capsulizer configured to capsulize data stream packets and metadata processing unit packets, unit by unit, so as to make possible partial execution of the metadata, and to generate a capsulized stream.

2. (Previously Presented) The information provisioning apparatus according to claim 1, wherein the metadata processing unit packets are placed so that processing of metadata processing units is completed before a processing start time of a corresponding segment of the data stream.

3. (Previously Presented) The information provisioning apparatus according to claim 1, wherein each said metadata packet includes a processing start time of the first packet of said corresponding segment of said data stream, and a duration of said segment.

4. (Previously Presented) The information provisioning apparatus according to claim 1, wherein said metadata is described by structured description.

5. (Previously Presented) The information provisioning apparatus according to claim 1, wherein said metadata processing unit is described by structured description.
6. (Previously Presented) The information provisioning apparatus according to claim 4, wherein said structured description is defined by Document Type Definition (DTD) of XML.
7. (Previously Presented) The information provisioning apparatus according to claim 4, wherein said structured description is defined by Resource Description Framework (RDF) of XML.
8. (Previously Presented) The information provisioning apparatus according to claim 4, wherein said structured description is defined by XML Schema.
9. (Previously Presented) The information provisioning apparatus according to claim 5, wherein said structured description is defined by Document Type Definition (DTD) of XML.
10. (Previously Presented) The information provisioning apparatus according to claim 5, wherein said structured description is defined by Resource Description Framework (RDF) of XML.
11. (Previously Presented) The information provisioning apparatus according to claim 5, wherein said structured description is defined by XML Schema.
12. (Cancelled)
13. (Previously Presented) An information provisioning apparatus comprising:
 - an acquirer configured to acquire a data stream of content that has timewise continuity and metadata that includes information related to the content;
 - a unitizer configured to unitize metadata that includes at least one metadata processing unit for a segment the data stream;
 - a synchronizer configured to synchronize the data stream segment and its corresponding metadata processing unit; and

a capsulizer configured to capsulize post-synchronization data stream packets and metadata processing unit packets, unit by unit, so as to make possible partial execution of the metadata, and to generate a capsulized stream.

14. (Previously Presented) An information receiving apparatus comprising:

an extractor configured to extract, from a capsulized stream, a content data stream that is composed of a plurality of segments, and metadata that comprises information related to the content and information related to the segments, the capsulized data stream comprising data stream packets and metadata processing unit packets that are capsulated, unit by unit, so as to make possible partial execution of metadata;

a storage configured to store the extracted data stream and metadata; and

a processor configured to process, unit by unit, the metadata, corresponding to segments subjected to processing, that is divided into metadata processing units set so as to make possible partial execution of the metadata.

15. (Previously Presented) The information receiving apparatus according to claim 14, wherein said metadata processing units are merged in accordance with restriction information for merging said metadata processing units.

16. (Previously Presented) The information receiving apparatus according to claim 14, wherein said processor displays said metadata.

17. (Previously Presented) The information receiving apparatus according to claim 14, wherein said processor converts said data stream in accordance with conversion processing defined by said metadata.

18. (Previously Presented) The information receiving apparatus according to claim 14, wherein said processor capsulizes data stream packets and metadata processing unit packets and transfers said capsulized data stream packets and said capsulized metadata processing unit packets to a node.

19. (Previously Presented) The information receiving apparatus according to claim 14, wherein said processor collects a plurality of metadata together, and processes the plurality of said metadata together.

20. (Previously Presented) An information receiving apparatus comprising:

- an extractor configured to extract a content data stream and metadata that comprises information related to the content, from a capsulized stream, the capsulized data stream comprising data stream packets and metadata processing unit packets that are capsulated, unit by unit, so as to make possible partial execution of metadata;

- a storage configured to store the extracted data stream and metadata;

- a synchronizer configured to synchronize, unit by unit, the metadata unitized in correspondence to a segment of the data stream with the content data stream and its corresponding metadata processing unit; and

- a processor configured to process, unit by unit, the metadata that is unitized in correspondence to the segment of the data stream.

21. (Cancelled)

22. (Previously Presented) A storage medium that can be read by a computer, and that stores an information provisioning program, the program comprising:

- an acquiring code segment for acquiring a data stream of content that has timewise continuity and metadata that includes information related to the content;

- a unitizing code segment for unitizing metadata that includes at least one metadata processing unit for a segment of the data stream;

- a synchronizing code segment for synchronizing the data stream segment and the corresponding metadata processing unit; and

- a capsulizing code segment for capsulizing post-synchronization data stream packets and metadata processing unit packets, unit by unit, so as to make possible partial execution of the metadata, and generating a capsulized data stream.

23. (Previously Presented) The storage medium according to claim 22, the program further comprising a placing code segment for placing said metadata processing unit packet so that processing of said metadata processing unit is completed before a processing start time of a corresponding segment of said data stream.

24. (Original) The storage medium according to claim 22, wherein said metadata is described by structured description.

25. (Previously Presented) The storage medium according to claim 22, wherein said metadata processing unit is described by structured description.

26. (Previously Presented) An information communication system comprising:

- an information provisioning apparatus that comprises:

- a acquirer configured to acquire a data stream of content that has timewise continuity and that is composed of a plurality of segments, and metadata that includes information related to the content and information related to the segments;

- a unitizer configured to divide metadata, corresponding to segments subjected to processing, into metadata processing units set so as to make possible partial execution of the metadata; and

- a capsulizer configured to capsulize data stream packets and metadata processing unit packets, unit by unit, so as to make possible partial execution of the metadata, and to generate a capsulized stream; and

- an information receiving apparatus that comprises:

- an extractor configured to extract a content data stream and metadata that comprises information related to the content, from the capsulized stream, the capsulized data stream comprising data stream packets and metadata processing unit packets that are capsulated, unit by unit, so as to make possible partial execution of metadata;

- a storage configured to store the extracted data stream and metadata; and

a processor configured to process, unit by unit, the metadata that is unitized in correspondence to a segment of the data stream.

27. (Currently Amended) An information communication system comprising:

an information provisioning apparatus that comprises:

an acquirer configured to acquire a data stream of content that has timewise continuity and metadata that includes information related to the content;

a unitizer configured to unitize metadata that includes at least one metadata processing unit for a segment of the data stream;

a synchronizer configured to synchronize the data stream segment and its corresponding metadata processing unit; and

a capsulizer configured to capsulize data stream packets and metadata processing unit packets, unit by unit, so as to make possible partial execution of the metadata, and to generate a capsulized stream; and

an information receiving apparatus that comprises:

an extractor configured to extract a content data stream and metadata that comprises information related to the content, from a capsulized stream, the capsulized data stream comprising data stream packets and metadata processing unit packets that are capsulated, unit by unit, so as to make possible partial execution of metadata;

a storage configured to store the extracted data stream and metadata;

a synchronizer configured to synchronize, unit by unit, the metadata unitized in correspondence to a segment of the data stream with the content data stream and its corresponding metadata processing unit; and

a processor configured to process, unit by unit, the metadata unitized in correspondence to the segment of the data stream.

28. (Currently Amended) An information provisioning method comprising:

acquiring a data stream of content that has timewise continuity and that is composed of a plurality of segments, and metadata that includes information related to the content and information related to the segments;

dividing metadata, corresponding to segments subjected to processing, into metadata processing units set so as to make possible partial execution of the metadata; and

capsulizing data stream packets and metadata processing unit packets, unit by unit, so as to make possible partial execution of the metadata, and generating a capsulized stream.

29. (Currently Amended) An information provisioning method comprising:

acquiring a data stream of content that has timewise continuity and metadata that includes information related to the content;

unitizing metadata that includes at least one metadata processing unit for a segment of the data stream;

synchronizing the segment of the data stream and its corresponding metadata processing unit; and

capsulizing data stream packets and metadata processing unit packets, unit by unit, so as to make possible partial execution of metadata and generating a capsulized stream.

30. (Previously Presented) An information receiving method comprising:

extracting a content data stream that is composed of a plurality of segments and metadata that comprises information related to the content, from a capsulized stream, and information related to the segments, the capsulized data stream comprising data stream packets and metadata processing unit packets that are capsulated, unit by unit, so as to make possible partial execution of metadata;

storing the extracted data stream and metadata; and

processing, unit by unit, the metadata, corresponding to segments subjected to processing, is divided into metadata processing units set so as to make possible partial execution of the metadata.

31. (Previously Presented) An information receiving method comprising:

extracting a content data stream and metadata that comprises information related to the content, from a capsulized stream, the capsulized data stream comprising data stream packets and

metadata processing unit packets that are encapsulated, unit by unit, so as to make possible partial execution of metadata;

storing the extracted data stream and metadata;

synchronizing, unit by unit, the metadata unitized in correspondence to a segment of the data stream with the content data stream and its corresponding metadata processing unit; and

processing, unit by unit, the metadata that is unitized in correspondence to the segment of the data stream.

32. (Previously Presented) The information provisioning apparatus according to claim 1, wherein the unitized metadata includes a metadata type, a flag indicating a presence or absence of time synchronization, and actual data.

33. (Previously Presented) The information provisioning apparatus according to claim 1, wherein the unitized metadata includes a metadata type, a flag indicating a presence or absence of time synchronization, a start time and duration of AV data, and actual data.

34. (Previously Presented) The information provisioning apparatus according to claim 32, wherein the actual data comprises information related to content, information related to a display method, or a program.

35. (Previously Presented) The information provisioning apparatus according to claim 32, wherein the metadata type comprises position information, content information, or information for processing metadata, or a program.

36. (Previously Presented) The information provisioning apparatus according to claim 33, wherein the actual data comprises information related to content, information related to a display method, or a program.

37. (Previously Presented) The information provisioning apparatus according to claim 33, wherein the metadata type comprises position information, content information, or information for processing metadata, or a program.